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OZONE LAYER AND DEVELOPMENT

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OZONE LAYER AND DEVELOPMENT

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Introduction

The United Nations Department of Economic and Social Affairs, which reports to the Economic and Social Council, is particularly concerned with the economic and social progress of developing countries, through the preparation of the Third Development Decade (1981-1990) and of the New International Economic Order.

At first sight, some of the problems related to the causes and effects of a reduction of the ozone layer seem remote from the specific concerns of developing countries. For instance, the problem of propelling a hair cosmetic seems to be irrelevant. On the other hand, the consequences of a depletion of the ozone layer concerns both developing and developed countries.

However, a more careful analysis leads to the opinion that some aspects of this problem area, are of particular importance to developing countries.

We will review briefly hereunder the economic and social implications (a) of a reduction of the ozone layer; and (b) of possible regulatory measures, from the particular point of view of Development.

I. Economic and Social Implications of a reduction of the Ozone Layer.

A reduction of the ozone layer may have an impact on health, climate and the ecosystems.

1.1. Health

A reduction of the ozone layer may produce an increase in ultra violet radiation which may cause skin cancer |sunburn or eye damage. Developing countries are mainly located in tropical areas. The geographical distribution of the ozone layer differs with the latitude: in temperate climates, where most developed countries are located, ozone distribution is higher, 300 to 400 m-atm-cm (Dobson units); in tropical countries, the ozone layer varies from 240 to 300. 1/

Therefore when the ozone layer is decreased by 10% through human activities, the ozone layer above northern countries will be 270 to 360; while that above tropical countries may go down to 216 Dobson units. The resulting ultra-violet radiation will be more acute in tropical countries, which are already less

1/ World Meteorological Organization - "Atmospheric Ozone" - UNEP/WG.7/5 of January 1, 1977, page 13. figure.1.

protected by ozone layer. It is the responsibility of the W.E.O. to investigate the impact of ozone layer reduction on health.

1.2. Climate

Any significant change in climate would have an impact on world agricultural production, a factor of great importance to developing countries where still exist malnutrition and famine.

1.3. Ecosystems

Similarly, a change in aquatic or terrestrial ecosystems, -- particularly the phytoplankton -- would have an effect on agricultural production of developing countries.

II. Economic and Social Implications of possible Regulatory Measures.

2.1. Chloro fluoromethan (C.F.M.)

The economic and social consequences of a possible ban on the use of the chloro fluoromethan (C.F.M.) has been the subject of a particular study by the United Nations Economic and Social Affairs Department, and a report will be presented by N. Michael Betts, Consultant on this topic.

It seems that research should be able to re-orient technologies so that they are not harmful to the ozone shield.

The refrigeration industry is of great importance to developing countries, notably for the conservation of food, and for the air conditioning of offices and homes in tropical areas, to improve comfort and stimulate intellectual activity.

2.2. Aircraft

Large fleets of aircraft flying at altitudes above 17 km may have a significant effect on the ozone layer.

It appears that a limitation in the number of most aircraft and a reduction in their altitudes of flight would have ^{little} impact on the process of development.

This is the concern of the I.C.A.O.

2.3. Fertilizers

The influence of nitrogen on ozone depletion seems to be one of the most important topics for the attention of the United Nations system in this area, particularly for F.A.O.

Agricultural production, at present, is mainly relying on the use of nitrogen fertilizers. More research would focus on the impact of these fertilizers on the ozone layer.

If an appropriate technological assessment would demonstrate that limits should be set to the use of such fertilizers to protect the ozone layer, this matter would be of great concern to Governments of developing countries.

2.4. Fuel Burning

The control of smoke emission of industrial and domestic burning of fuel for the purpose of protecting the ozone layer will be a subject of study for UNIDO and UNEP.

2.5. Nuclear explosions

Nuclear explosions, for peaceful purposes, which fall within the terms of reference of IAEA, have been used for civil engineering work. An Assessment of this technique from the point of view of its effect on the ozone barrier would be useful

Conclusions

The General Assembly has decided that a United Nations Conference on Science and Technology would be convened in 1979. Governments may wish to consider whether the problems related to the ozone layer might be submitted for consideration by this conference.